

What is claimed is:

1. An electrosurgical probe for delivering energy to tissue, comprising:

5 a body having a working end comprising an interior conductor covered by a surface layer of a substantially insulative material;

at least one conductive element extending through the surface layer, wherein the conductive element has an exposed first end and an interior second end disposed proximate to the interior conductor; and

10 the surface layer defining a thermal expansion coefficient wherein the surface layer at a first lower temperature maintains said second end of the conductive element in contact with the interior conductor portion, and wherein the surface layer at a second higher temperature moves said second end away from contact with the interior conductor.

15 2. The working end of Claim 1 further comprising an electrical source operatively coupled to said interior conductor.

3. The working end of Claim 1 further comprising a return electrode carried about an exterior of the probe spaced apart from the surface layer.

20 4. The working end of Claim 1 wherein the surface layer is a resilient material.

5. The working end of Claim 1 wherein the surface layer is a polymer.

6. The working end of Claim 1 wherein the surface layer is a polymer that defines a positive temperature coefficient.

7. The working end of Claim 1 further comprising a resistor proximal to the surface layer.

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8. The working end of Claim 3 further comprising a resistor between the interior conductor and the return electrode.

9. The working end of Claim 1 wherein the surface layer is a ceramic.

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10. The working end of Claim 1 wherein the surface layer extends 360° about the exterior of probe.

11. The working end of Claim 1 wherein the surface layer has an open cell structure.

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12. The working end of Claim 1 wherein the surface layer has a closed cell structure.

13. A working end of a surgical probe for pressure-controlled Rf energy application to tissue, comprising:

an interior electrode covered with an elastomeric surface layer;

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at least one conductive element extending through the elastomeric surface layer, wherein the element has a first exposed end and a second end disposed proximate to the interior electrode; and

wherein a selected pressure on the surface layer moves said second end of the conductive element into or away from electrical contact with the interior electrode.

14. The working end of Claim 13 further comprising an electrical source operatively coupled to said
5 interior electrode.

15. The working end of Claim 13 further comprising a return electrode carried about an exterior of the probe.

10 16. The working end of Claim 13 wherein the surface layer is a non-conductive polymer.

17. The working end of Claim 13 wherein the surface layer is a polymer that defines a positive temperature coefficient.

15 18. The working end of Claim 13 wherein the surface layer comprises a silicone doped with a conductive composition.

19. The working end of Claim 15 further comprising a resistor intermediate the interior electrode and the return electrode.

20 20. The working end of Claim 13 wherein the surface layer extends 360° about the exterior of probe.